

Chaos Engineering

When the network breaks



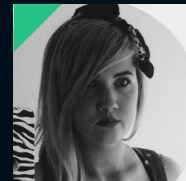
Gremlin

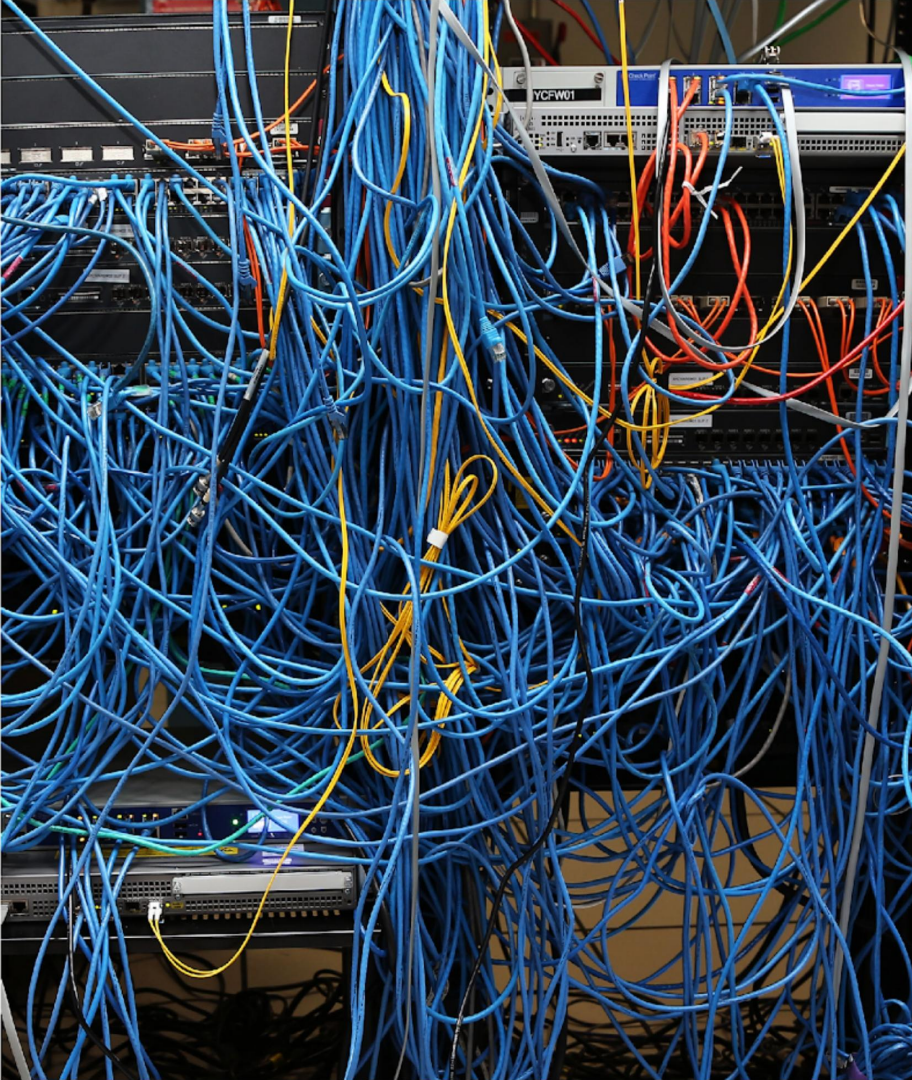
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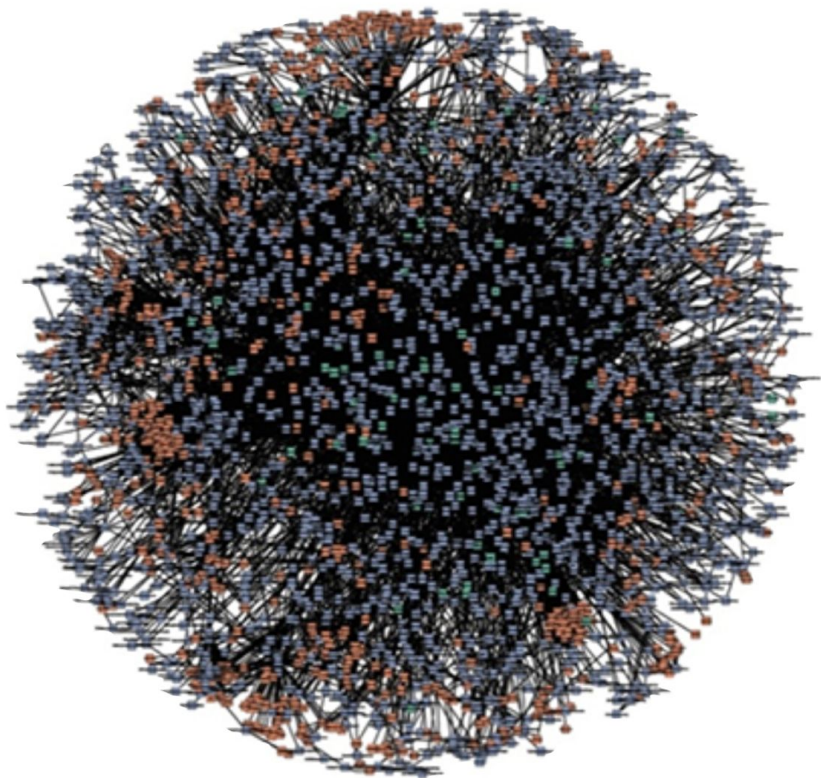
[@tammybutow](https://twitter.com/tammybutow)





THE PROBLEM

Every system is becoming a distributed system.

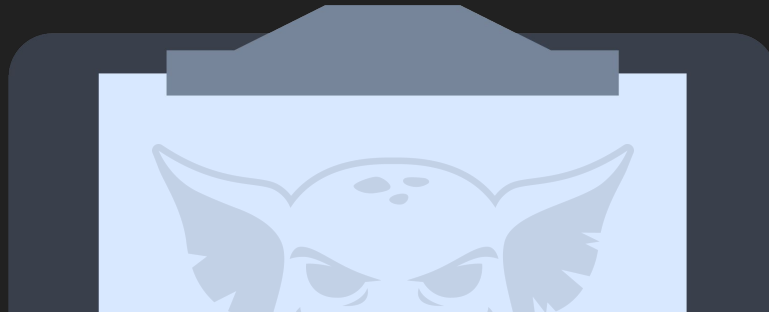


amazon

NETFLIX

Chaos Engineering

Thoughtful, planned experiments
designed to reveal the
weakness in our systems.



Inject something harmful to
build an immunity.



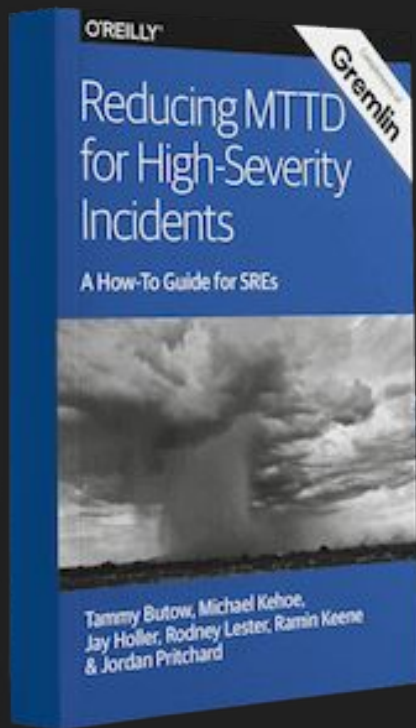
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We test **proactively**, instead of
waiting for an outage.

Define the Blast Radius

What is value of Chaos Engineering?





Improved Incident Management

Gremlin

Fire drills prepare us to
respond quickly, calmly,
and safely.



Measuring the Cost of Downtime

$$\text{Cost} = R + E + C + (B + A)$$

During the Outage

R = Revenue Lost

E = Employee Productivity

After the Outage

C = Customer Chargebacks

(SLA Breaches)

Unquantifiable

B = Brand Defamation

A = Employee Attrition

Amazon is estimated to lose **\$220,000/min**

The average e-commerce site loses **\$6,800/min**

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Network Chaos

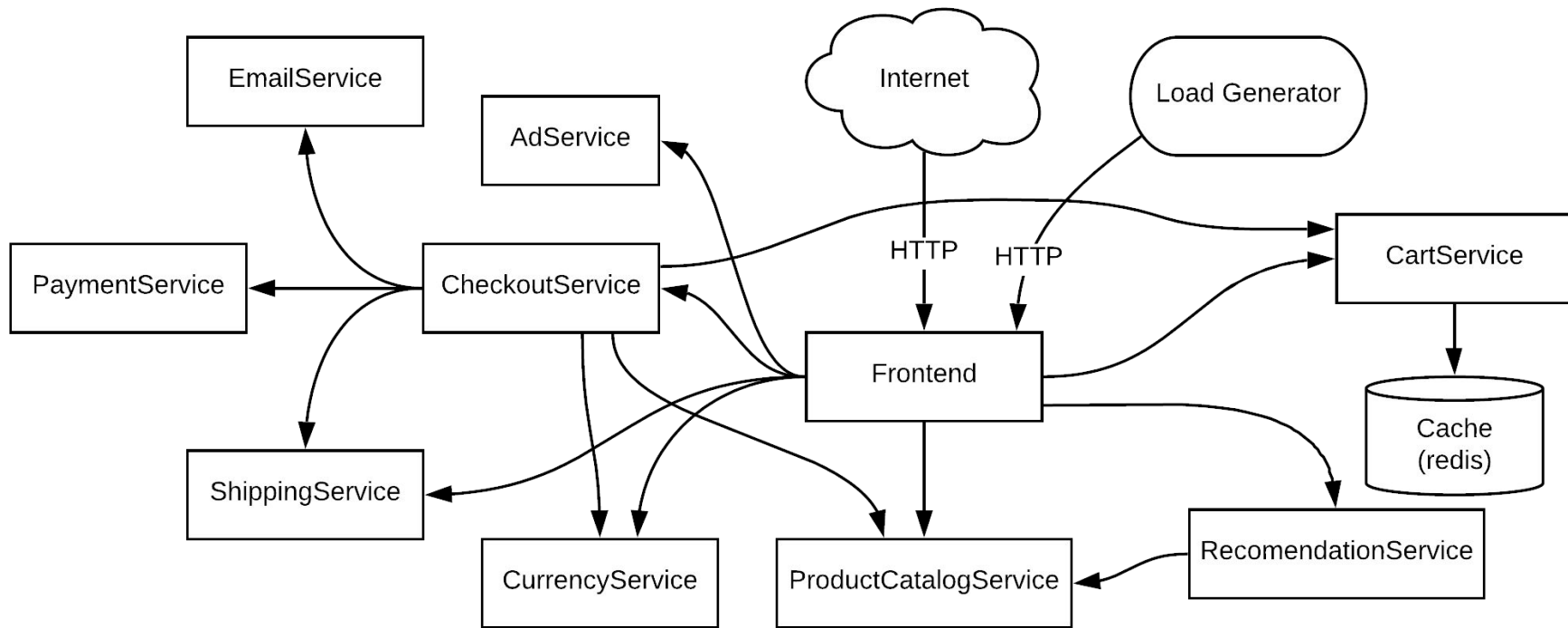


Network Chaos Engineering Demo

01

Blackhole

Hipster Shop Architecture



Blackhole Attack

Demo

CHAOS EXPERIMENT FORM

APPLICATION NAME

Hipster Shop

MONITORING TOOL

Datadog

EXPERIMENT NAME

Experiment #1

Blackhole Attack

FAILURE TO INJECT

Drop all traffic

IMPACT OF FAILURE

`paymentservice`

SCOPE OF FAILURE

120 seconds

DURATION OF FAILURE

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TOOL TO USE

HYPOTHESIS

Expect
payments to
fail and errors
thrown

RESULTS

ABORT CONDITION

HTTP 400/500
errors

ACTION ITEMS

JOIN US ON SLACK/CHAOSENGINEERING

Results

Run this Chaos Engineering Experiment yourself!

<https://www.gremlin.com/community/tutorials/how-to-install-and-use-gremlin-with-eks/>

Was it expected?

Chaos Engineering uncovers unknown side effects.

Was it detected?

Ensuring that our monitoring is configured correctly is critical.

Was it mitigated?

When possible our systems should gracefully degrade.

Fix the issues.

Whether code, configuration or process - iterate and improve.

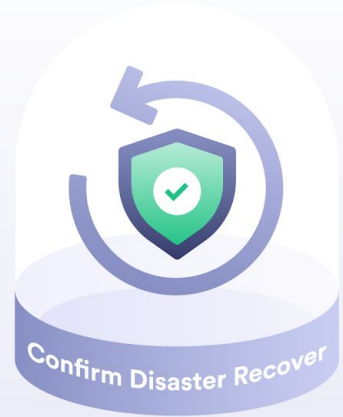
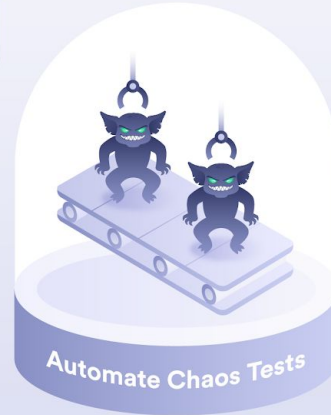
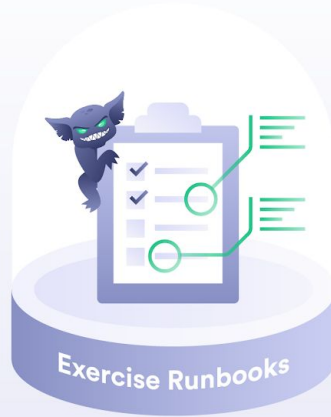
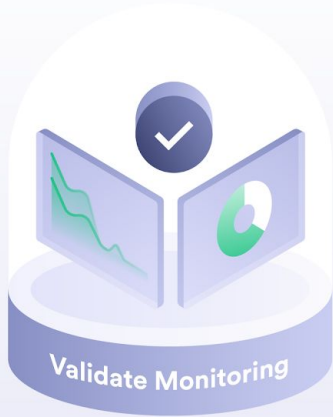
Can you automate this?

Regularly exercise past failures to prevent the drift into failure.

Share your results!

Prepare an Executive Summary of what you learned.

Where can you **get started**?



Join the Chaos Engineering Community

gremlin.com/slack

Thank You



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